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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,453	03/10/2005	Patricia Wei Yin Chiang	851663.473USPC	2402

30423 7590 06/09/2009
STMICROELECTRONICS, INC.
MAIL STATION 2346
1310 ELECTRONICS DRIVE
CARROLLTON, TX 75006

EXAMINER	
ROBERTS, JESSICA M	

ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
06/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,453	CHIANG ET AL.	
	Examiner	Art Unit	
	JESSICA ROBERTS	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 26 February 2009.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,5-7,10-14,17-19 and 22-29 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 5-7 and 10-14 is/are allowed.

6)☒ Claim(s) 1,17-19,22-24 and 27-29 is/are rejected.

7)☒ Claim(s) 25 and 26 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 26 February 2009 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

Claims 1,5-1-7. 10-14, 17-19, 22-29 are currently pending. Claims 8-9 and 21 have been cancelled and claims 25-29 have been added by Applicants amendment.

Acknowledgment of Amendments

Applicant's amendment filed on 02/26/2009 overcomes the following objection(s)/rejection(s):

The objections to the drawings have been withdrawn in view of Applicants amendment filed on 02/26/2009.

The rejection of claims 1, 5-14 and 23-24 for being indefinite has been withdrawn in view of Applicants amendment filed on 02/26/2009.

The rejection of claims 1,5-14 and 23-24 for not being a proper process has been withdrawn in view of Applicants amendment filed on 02/26/2009.

The rejection of claims 1,5-14, and 23-24 as not qualifying as a statutory process has been withdrawn in view of Applicants amendments filed on 02/26/2009.

The rejection of claims 18, 19, and 22 under 35 U.S.C. § 101 as being non-statutory has been withdrawn in view of Applicants amendment.

Response to Arguments

1. Applicant's arguments filed 02/26/2009 have been fully considered but they are not persuasive.

2. As to Applicants argument regarding Oikawa does not teach or suggest such modules that are missing from Lee. Oikawa does not select <u>two</u> quantization vectors, such as to generate a first and second encoded video data using a first of the two and a second of the two, respectively, as recited in claim 19.

3. The Examiner respectfully disagrees. Oikawa teaches a selector module for selecting two of said quantization vectors on the basis of said estimates (According to the present invention, there is also provided an apparatus for recording quantized and encoded digital video signals comprising first quantization step decision means for determining a quantization step in terms of a video segment made up of plural macro-blocks as a unit so that the quantity of quantized data is less than a pre-set data quantity, second quantization step decision means for determining a quantization step in terms of the macro-blocks as a unit so that the quantity of quantized data is less than the pre-set data quantity, and quantization means for quantizing the digital video signals with the quantization steps determined by the first quantization step decision means and the second quantization step decision means, column 2 line 45-57. Since Oikawa teaches a quantizing the digital video signals with the quantization steps determined by the first quantization step decision means and the second quantization step decision means, it is clear to the examiner that Oikawa discloses to select the first and second quantization step decision, which reads upon the claimed limitation), first quantization and variable length coding modules for generating first encoded video data using a first of said selected quantization vectors (first quantization step decision circuit, column 4 line37-44 and fig.1 element 23, 26) , second quantization and variable length coding

modules for generating second encoded video data using a second of said selected quantization vectors (second quantization step decision circuit, column 5 line 66 to column 6 line 3, and fig.1 element 24, 26), and an output decision module for selecting one of said first encoded video data and said second encoded video data for output on the basis of at least one of the bit count value of said first encoded video data and the bit count value of said second encoded video data (the first quantization unit determines a quantization step in terms of a video segment made up of plural macro-blocks as a unit so that the quantity of quantized data is less than a pre-set data quantity, while the second quantization unit decision unit determines a quantization step in terms of the macro-blocks as a unit so that the quantity of quantized data is less than the pre-set data quantity. The quantization unit quantizes the digital video signals with the quantization steps determined by the first quantization step decision unit and the second quantization step decision unit. This enables the degree of quantization to be refined in a range of a pre-set data quantity of quantized data to render it possible to make effective utilization of redundant bits, thus assuring efficient encoding and improved picture quality, column 2 line 63 to column 3 line 4 and fig, 6. Therefore, it is clear to the examiner that Oikawa discloses to select the quantization step size based on the quantity of VLC data as shown in fig. 6, which reads upon the claimed limitation

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 1,17-19,22-24,27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al, Target Bit Matching for MPEG-2 Video Rate Control in view of Oikawa et al., US-5,677,734 in view of Pullen et al., US-5,923,376.

As per **claim 1**, Lee teaches A method for use in encoding video data, comprising: a predetermined relationship between metric values and respective quantities of encoded video data (Lee discloses the normalized local activity is N_act_j is defined as:

$$N\_act_j = \frac{2 \times act_j + avg\_act}{act_j + 2 \times avg\_act} \qquad (11)$$

Further disclosed is for estimating the reference quantization parameter for each macroblock, we define the following equation based on the rate distortion theory:

$$q_i = 2^C \times \gamma_i \qquad (13)$$

Where C is a parameter that controls the bit rate, and γ_i scaling factor which characterizes the properties of the current macroblock. Further disclosed is where we

may use N_act_j in Eq. (11) as the scaling factor γ_i, for macroblock *i.* Further, while encoding the reference macroblock we adjust the initial quantization parameter such that the number of actual coding bits is close to the average number of coding bits B_{avg} for the macroblock. The value of C is then calculated from Eq. 13. 3.2 Reference Quantization Parameter and Eq. 13-18). Since Lee discloses the local activity is the scaling factor for the macroblock, and to adjust the quantization parameter such that the number of actual coding bits are close to the average number of coding bits (where the number of coding bits is directly related to the target number of bits), which is used to calculate the parameter that controls the bit rate, it is clear to the examiner that there is a predetermined relationship (where the average bit rate is close to the target bit rate) among the quantization parameter and the parameter that controls the bit rate, which reads upon the claimed limitation), the predetermined relationship determined during a calibration process and based at least in part on a metric function and reference video data (3. A Proposed Algorithm); receiving input video data after the predetermined relationship (3.2 Reference Quantization Parameter); using said metric function to generate metric values from said video input data (Lee teaches the spatial activity measure for macroblock *j* is first calculated from the four luminance frame-based subblocks and the four luminance field based subblocks using the original pixel value. 2.3 Adaptive Quantization and equation (8)), and respective encoding parameters (quantization parameter *q* 3.2. Reference Quantization Parameter); selecting at least one of said encoding parameters on the basis of a desired quantity of encoded video data (While encoding the reference macroblock, we adjust the initial quantization

parameter Q_{int} such that the number of actual coding bits is close to the average number of coding bits B_{avg} for the macroblock, 3.2 reference Quantization Parameter. Since the quantization parameter is adjusted such that the average number of bits is close to the average, and the average number of coding bits is directly related to the target number of bits, T (equations 24), it is clear to the examiner that Lee discloses to adjust the quantization parameter based with respect to a desired quantity (target bits) of encoded data) and <u>said</u> predetermined relationship between metric values and respective quantities of encoded video data (Lee discloses the normalized local activity is N_act_j is defined as:

$$N\_act_j = \frac{2 \times act_j + avg\_act}{act_j + 2 \times avg\_act} \quad (11)$$

Further disclosed is for estimating the reference quantization parameter for each macroblock, we define the following equation based on the rate distortion theory:

$$q_i = 2^C \times \gamma_i \quad (13)$$

Where C is a parameter that controls the bit rate, and γ_i scaling factor which characterizes the properties of the current macroblock. Further disclosed is where we may use N_act_j in Eq. (11) as the scaling factor γ_i, for macroblock *i*. Further, while encoding the reference macroblock we adjust the initial quantization parameter such that the number of actual coding bits is close to the average number of coding bits B_{avg} for the macroblock. The value of C is then calculated from Eq. 13. 3.2 Reference Quantization Parameter and Eq. 13-18). Since Lee discloses the local activity is the scaling factor for the macroblock, and to adjust the quantization parameter such that the

number of actual coding bits are close to the average number of coding bits (where the number of coding bits is directly related to the target number of bits), which is used to calculate the parameter that controls the bit rate, it is clear to the examiner that there is a predetermined relationship (where the average bit rate is close to the target bit rate) among the quantization parameter and the parameter that controls the bit rate, which reads upon the claimed limitation); encoding said input video data using the selected at least one encoding parameter (2.1 Bit Allocation).

Lee does not explicitly disclose storing a predetermined relationship between metric values and respective quantities of encoded video data.

However, Oikawa teaches a storing a predetermined relationship between metric values and respective quantities of encoded video data (Oikawa teaches a picture memory. Therefore, taking Lees teachings of a predetermined relationship with Oikawas teachings of a memory, now incorporates all the elements of claim 1. Now, Lee incorporating the memory of Oikawa read upon the claimed limitation) and under the control of at least one of a configured hardware circuit (fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Oikawa with Lee for providing efficient encoding and improved picture quality, column 3 line 4-8.

Lee (modified by Oikawa) is silent in regards to at least one of a configured hardware circuit and a configured computer.

However, However, Pullen teaches at least one of a configured hardware circuit and a configured computer.

(Pullen teaches where compression methods may be implemented by a general purpose computer executing instructions storing in a memory to generate a compressed representation of a data set usually stored in a working memory (column 1 line 55-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Pullen with Lee (modified by Oikawa) for providing improved encoding.

As per **claim 17,** see the rejection and analysis made in claim 1, except this is a claim to a video encoding module with the same limitations as claim 1. Thus the rejection and analysis made for claim 1 also applies.

As per **claim 18**, which is substantially the same claim 1, in addition to a predictor module, Thus the rejection and analysis for claim 1 also applies here for common subject matter.

Lee teaches a predictor module (Lee discloses while encoding the reference macroblock, we adjust the initial quantization parameter Q_{int} such that the number of coding bits is close to the average number of coding bits B_{avg} for the macroblock, 3.2 Reference Quantization Parameter and eq. 17 and 18. Lee further discloses where we can exploit the relationship between the number of actual coding bits, BIT_{actual} and the number of estimated coding bits, $BIT_{estimated}$, of the previous macroblock. BIT_{actual} and $BIT_{estimated}$, represent the number of actual bits and the number of allocated bits for the previous macroblock respectively, see 3.3 Target Bit Matching for Adaptive Quantization. Since Lee discloses while encoding the reference block, to adjust the

initial quantization parameter such that number of coding bits is close to the number of average coding bit, and the BIT_{actual} and $BIT_{estimated}$, represent the number of actual bits and the number of allocated bits for the previous macroblock, it is clear to the examiner that Lee discloses to estimate the number of bits to represent the macroblock using an initial quantization parameter which reads upon the claimed limitation).

As per **claim 23**, Lee (modified by Oikawa and Pullen) as a whole teaches everything as claimed above, see claim1. In addition, Lee teaches A method as claimed in claim 1, including generating predicted quantities of encoded <u>input</u> video data from said predetermined relationship and said metric values generated from said <u>input</u> video data (where we can exploit the relationship between the number of actual coding bits, BIT_{actual} and the number of estimated coding bits, $BIT_{estimated}$, of the previous macroblock. BIT_{actual} and $BIT_{estimated}$, represent the number of actual bits and the number of allocated bits for the previous macroblock respectively, see 3.3 Target Bit Matching for Adaptive Quantization), and selecting one or more of said predicted quantities of encoded <u>input</u> video data closest to said desired quantity of encoded video data (Lee discloses to adjust the initial quantization parameter Q_{int} such that the number of actual coding bits is close to the average number bits B_{avg} for the macroblock, see 3.2 Reference Quantization Parameter and eq. 17-18)

As per **claim 24**, (modified by Oikawa and Pullen) as a whole teaches everything as claimed above, see claim 1. In addition, Lee teaches A method as claimed in claim 1,

wherein said predetermined relationship is determined on the basis of metric values generated by said metric-function from said reference video data and respective encoding parameters (Lee discloses where to select a reference macroblock that has the average scaling factor. Since the reference macroblock should characterize the coded picture, we choose a MB_INTA, MB_FORWARD, and MB_FORWARD I, MB_BACKWARD coded macroblock for the I, P, and B pictures, respectively. While encoding the reference block, we adjust the initial quantization parameter Q_{int}, such that the number of actual coding bit is close to the average number of coding bits B_{avg} for the macroblock. The value of C is then calculated form eq. 13, see 3.2 Reference Quantization Parameter and eq. 13, 17-18. Therefore, it is clear to the examiner that the parameter C that controls the bit rate, is calculated with respect to the reference frames, which reads upon the claimed limitation), and respective quantities of encoded video data generated by encoding said reference video data using said respective encoding parameters (fig. 1, element encoder).

As per **claim 19**, Lee teaches A video encoding module, including a predictor module for determining estimates for bit counts representing the quantity of video data encoded using respective quantization vectors (Lee discloses while encoding the reference macroblock, we adjust the initial quantization parameter Q_{int} such that the number of coding bits is close to the average number of coding bits B_{avg} for the macroblock, 3.2 Reference Quantization Parameter and eq. 17 and 18. Lee further discloses where we can exploit the relationship between the number of actual coding

bits, BIT_{actual} and the number of estimated coding bits, $BIT_{estimated}$, of the previous macroblock. BIT_{actual} and $BIT_{estimated}$, represent the number of actual bits and the number of allocated bits for the previous macroblock respectively, see 3.3 Target Bit Matching for Adaptive Quantization. Since Lee discloses while encoding the reference block, to adjust the initial quantization parameter such that number of coding bits is close to the number of average coding bit, and the BIT_{actual} and $BIT_{estimated}$, represent the number of actual bits and the number of allocated bits for the previous macroblock, it is clear to the examiner that Lee discloses to estimate the number of bits to represent the macroblock using an initial quantization parameter which reads upon the claimed limitation). Lee does not explicitly teach a selector module for selecting two of said quantization vectors on the basis of said estimates, first quantization and variable length coding modules for generating first encoded video data using a first of said selected quantization vectors Lee discloses where the , second quantization and variable length coding modules for generating second encoded video data using a second of said selected quantization vectors, and an output decision module for selecting one of said first encoded video data and said second encoded video data for output on the basis of at least one of the bit count value of said first encoded video data and the bit count value of said second encoded video data<u>, wherein the video encoding module further includes at least one of: a t least one dedicated hardware circuit configured to implement the predictor module; and at least one processor configured to execute the predictor module.</u>

However, Oikawa teaches a selector module for selecting two of said quantization vectors on the basis of said estimates (According to the present invention,

there is also provided an apparatus for recording quantized and encoded digital video signals comprising first quantization step decision means for determining a quantization step in terms of a video segment made up of plural macro-blocks as a unit so that the quantity of quantized data is less than a pre-set data quantity, second quantization step decision means for determining a quantization step in terms of the macro-blocks as a unit so that the quantity of quantized data is less than the pre-set data quantity, and quantization means for quantizing the digital video signals with the quantization steps determined by the first quantization step decision means and the second quantization step decision means, column 2 line 45-57. Since Oikawa teaches a quantizing the digital video signals with the quantization steps determined by the first quantization step decision means and the second quantization step decision means, it is clear to the examiner that Oikawa discloses to select the first and second quantization step decision, which reads upon the claimed limitation), first quantization and variable length coding modules for generating first encoded video data using a first of said selected quantization vectors (first quantization step decision circuit, column 4 line37-44 and fig.1 element 23, 26) , second quantization and variable length coding modules for generating second encoded video data using a second of said selected quantization vectors (second quantization step decision circuit, column 5 line 66 to column 6 line 3, and fig.1 element 24, 26), and an output decision module for selecting one of said first encoded video data and said second encoded video data for output on the basis of at least one of the bit count value of said first encoded video data and the bit count value of said second encoded video data (the first quantization unit determines a quantization

step in terms of a video segment made up of plural macro-blocks as a unit so that the quantity of quantized data is less than a pre-set data quantity, while the second quantization unit decision unit determines a quantization step in terms of the macro-blocks as a unit so that the quantity of quantized data is less than the pre-set data quantity. The quantization unit quantizes the digital video signals with the quantization steps determined by the first quantization step decision unit and the second quantization step decision unit. This enables the degree of quantization to be refined in a range of a pre-set data quantity of quantized data to render it possible to make effective utilization of redundant bits, thus assuring efficient encoding and improved picture quality, column 2 line 63 to column 3 line 4 and fig, 6. Therefore, it is clear to the examiner that Oikawa discloses to select the quantization step size based on the quantity of VLC data as shown in fig. 6, which reads upon the claimed limitation);, wherein the video encoding module further includes at least one of: a t least one dedicated hardware circuit configured to implement the predictor module (fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Oikawa with Lee for providing efficient encoding and improved picture quality, column 3 line 4-8.

Lee (modified by Oikawa) is silent in regards to and at least one processor configured to execute the predictor module.

However, Pullen teaches one processor configured to execute the predictor module (Pullen teaches where compression methods may be implemented by a general

purpose computer executing instructions storing in a memory to generate a compressed representation of a data set usually stored in a working memory (column 1 line 55-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Pullen with Lee (modified by Oikawa) for providing improved encoding.

As per **claim 22**, which is substantially the same as claim 19, except this is a claim to MPEG encoder. In addition to a coding module for encoding the input video data using the selected quantization vectors.

Lee teaches a MPEG encoder (MEPG-2, see abstract and Fig. 1) coding module for encoding the input video data using the selected quantization vector (see fig. 1).

As per claim 27, Lee (modified by Oikawa and Pullen) as a whole teaches everything as claimed above, see claim 18. In addition, Lee teaches the video encoding module of claim 18, wherein said metric function is based on AC coefficients of discrete cosine transformation data generated from said video data (Lee discloses where we may use N_act_j in Eq. (11) as the scaling factor γ_i as the scaling factor, for γ_i macroblock *i*. However, since a good measure of the human visual sensitivity is the power of AC coefficients normalized by the DC value, we can define the scaling factor:

$$\gamma_i = \sqrt{\frac{\sum_{j=0}^{3}\sum_{i=1}^{63} dct_{i,j,k}^2}{232}} \frac{128}{\max(DC, DC_{max})} \qquad (14)$$

Therefore, it is clear to the examiner that Lee discloses a metric function that is based on the AC coefficients of the macroblock normalized by the DC coefficients, which reads upon the claimed limitation.

As per claim 29, Lee (modified Oikawa) as a whole teaches everything as claimed above, see claim 22. In addition Lee teaches the MPEG encoder of claim 22, wherein said relationship is a power law relationship (3.2 Reference Quantization Parameter, Eq. (13)).

4. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al, Target Bit Matching for MPEG-2 Video Rate Control in view of Oikawa et al., US-5,677,734 in view of Pullen et al., US-5,923,376 and further in view of Wu et al., US-6,947,378.

As per claim 28, Lee (modified by Oikawa and Pullen) as a whole teaches everything as claimed above, see claim 18. Lee is silent in regards to the video encoding module of claim 18, wherein said metric function is a spatial activity metric function based on a sum of weighted AC discrete cosine transformation coefficients.

However, Wu teaches wherein said metric function is a spatial activity metric function based on a sum of weighted AC discrete cosine transformation coefficients (The spatial complexity can be estimated using a weighted sum of the magnitudes of the AC coefficients for each macroblock of the I-Frame, column 8 line 12-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Wu with Lee (modified by Oikawa and Pullen) for providing improved picture quality.

Allowable Subject Matter

5. Claims 5-7, 10-14 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

7. The following is a statement of reasons for the indication of allowable subject matter. The present invention as claimed involves a metric function of the form u , v f (u , v) w (u , v) q (u , v) ,where f(u,v) is a discrete cosine transformation coefficient of a block element with coordinates (u,v), w(u,v) is a weight for said coefficient, and q(u,v) is a quantization parameter for said coefficient.

8. The prior art of record fails to anticipate or render obviousness the limitations of the claimed invention where the metric function is of the form u , v f (u , v) w (u , v) q (u , v) ,where f(u,v) is a discrete cosine transformation coefficient of a block element with coordinates (u,v), w(u,v) is a weight for said coefficient, and q(u,v) is a quantization parameter for said coefficient.

9. Claims 25 and 26 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter. The present invention as claimed involves a metric function of the form u , v f (u , v) w (u , v) q (u , v) ,where f(u,v) is a discrete cosine transformation coefficient of

a block element with coordinates (u,v), w(u,v) is a weight for said coefficient, and q(u,v) is a quantization parameter for said coefficient.

11. The prior art of record fails to anticipate or render obviousness the limitations of the claimed invention where the metric function is of the form u , v f (u , v) w (u , v) q (u , v) ,where f(u,v) is a discrete cosine transformation coefficient of a block element with coordinates (u,v), w(u,v) is a weight for said coefficient, and q(u,v) is a quantization parameter for said coefficient.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA ROBERTS whose telephone number is (571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621
/Jessica Roberts/
Examiner, Art Unit 2621